Remarks

This preliminary amendment is being filed concurrently with a RCE. Entry is respectfully requested.

Upon entry of the foregoing amendment, claims 1-4, 7-11, 14-16, 19-23, and 26-27 are pending in the application, with 1, 8, 15, and 20 being the independent claims. Claims 1, 3, 4, 7, 8, 10, 11,15-16, 20, and 22 are sought to be amended. Dependent claim 27 is sought to be added. Claims 5-6, 12-13, 17-18 and 24-25 were previously cancelled. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendments and the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 102

Claims 1, 4, 8, 11, 15, 19-20, and 23 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Publication No. 2001/0012783 to Peeters *et al.* ("Peeters"). Applicant respectfully traverses this rejection.

Peeters does not teach or suggest all of the features of independent claims 1, 8, 15, and 20, as amended, at least for the following reasons.

First, independent claims 1, 8, 15, and 20, as amended, require that *the at least one carrier group parameter be used to set up a tone decoder* in a modem. This feature is not taught by Peeters. Therefore, Applicant respectfully requests that the rejection be withdrawn.

In the carrier constellation information in multi-carrier system of Peeters, the carriers are grouped in subsets. A constellation information transmitting arrangement produces for each carrier subset a limited set of parameter values. These sets of parameter values are transmitted to a constellation information receiving arrangement. Through interpolation of

the limited set of parameter values, the constellation information receiving arrangement

determines the constellation where each carrier subset will be modulated with (Peeters

Abstract, columns [0018] and [0019]). However, nothing in Peeters teaches or suggests that

the at least one carriergroup parameter is used to set up an encoder as recited in independent

claims 1, 8, 15, and 20, using their respective language.

Further, Applicant would like to point out, as will be discussed later, that Gardner also

does not teach or suggest the above noted feature of claims 1, 8, 15, and 20. Gardner is used

by the Examiner, on page 15 of the Office Action with respect to dependent claims 7, 14, and

26, to allegedly teach, which Applicant does not acquiesce to, that at least one message

comprising the at least one carrier group parameter is used to set up a *tone encoder* in a far

end modem

Second, independent claims 1, 8, 15, and 20 require that the carrier groups are of

dynamically variable size. This feature is not taught by Peeters. Therefore, Applicant

respectfully requests that the rejection be withdrawn.

The Examiner, in response to Applicant's previous arguments (in Response of January

14, 2008), on page 2 of the Advisory Action states:

> Paragraph 0021 of Peeters states that "After channel analysis, the
> carriers are grouped in subsets of carriers where the same amount
> of bits will be allocated to and where the applied gain is obtained
> for through linear interpolation. The subsets of carriers typically
> will not contain the same number of carriers and the constitution of
> the subsets will be reported via message from the VDSL receiver
> to the VDSL transmitter." This paragraph indicates that after
> channel analysis, the carriers are grouped according to a
> constellation information message transmitted from the receiver to
> the transmitter.
>
> Paragraph 0023 states "transmitting and computing bits and gains
> information may be applied at initialization but alternatively may
> be applied during operation to adapt the carrier constellation
> according to changes of the channel characteristics." It is
> understood that during initialization, the receiver will transmit the
> constellation information message to group the subcarrier with the

same bit information. *Paragraph 0023 states that the same
operation as the initialization can alternatively be applied during
operation* according to changes of the channel characteristics.
*That means all the process during initialization will be repeated
during operation;* including a regrouping of the carriers according
to the latest computed bits and gains information. As the
regrouping is being carried out, it satisfied the limitation of
"dynamically variable size". (emphasis added)

Applicant respectfully disagrees. Peeters teaches that transmitting and computing bits

and gains information (but not every operation such as grouping of the carriers) may be

applied at initialization or alternatively during operation to *adapt carrier constellations* (bits

and gains information) according to changes to channel characteristics (Peeters Para. 0023).

Therefore, the method of Peeters that the *constellation information* (which is the bits and

gains information, and does not include the description of the carrier subsets) maybe

computed and transmitted during the operation to adapt to changes is not the same as

"dynamically variable size carrier group" as recited in claims 1, 8, 15, and 20 wherein the

carrier group size may dynamically change to adapt to changes.

Dependent claims 4, 11, 19-20, and 23 are not anticipated by Peeters for at least the

same reasons as the independent claims form which they respectively depend, and further in

view of their own respective features.

For at least these reasons, it is respectfully requested that this rejections of claims 1, 4,

8, 11, 15, 19-20, and 23 be withdrawn.

Rejections under 35 U.S.C. § 103

Claims 2-3, 9-10, 16, and 21-22

Claims 2-3, 9-10, 16, and 21-22 were rejected under 35 U.S.C. § 103(a) as allegedly

being unpatentable over Peeters. Applicant respectfully traverses this rejection.

As noted above, Peeters does not teach or suggest all of the features of independent claims 1, 8, 15 and 20 from which the rejected claims respectively depend. Independent claims 1, 8, 15 and 20 require that *the at least one carrier group parameter be used to set up a tone decoder* in a modem and the carrier groups are of *dynamically variable size.* These features are not taught by Peeters. Dependent claims 2-3, 9-10, 16, and 21-22 are not anticipated by Peeters for at least the same reasons as the independent claims form which the respectively depend, and further in view of their own respective features.

For at least these reasons, it is respectfully requested that this rejections of claims 2-3, 9-10, 16, and 21-22 be withdrawn.

Claims 7, 14, and 26

Claims 7, 14, and 26 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Peeters in view of U.S. Patent No. 7,042,367 to Gardner *et al.* ("Gardner"). Applicant respectfully traverses this rejection.

These dependent claims necessarily include all features of their respective independent claims 1, 8, and 20. As discussed above, Peeters fails to disclose all features of claims 1, 8, and 20, and further Gardner fails to cure the deficiencies of Peeters as noted above. Gardner does not teach what is missing from Peeters, for example *the at least one carrier group parameter is used to set up a tone decoder* and the carrier groups are of *dynamically variable size* which are disclosed in claims 1, 8, and 20.

The Examiner, on page 15 of the Office Action, relies upon Gardner with respect to dependent claims 7, 14, and 26, to allegedly teach that at least one message comprising the at least one carrier group parameter is used to set up a *tone encoder* in a far end modem.

The very high data rate telemetry system of Gardner, for use in a wellbore, includes multiple nodes distributed in the wellbore which simultaneously communicate with a remote location (Gardner Abstract). An uplink transmitter of the telemetry system of Gardner

includes a tone order and constellation encoder that the number of bits per bin and the type of

QAM coding to be performed by the encoder were previously determined during modem

initialization (Gardner, Col. 8, Line 66 to Col. 9, Line 3). Also, the uplink receiver of the

system of Gardner includes a constellation decoder and bit extractor which decodes values of

each subchannel individually (Gardner Col. 9, Lines 1-20 and 55-59). However, upon

inspection, the system of Gardner does not teach or suggest that *the at least one carriergroup*

parameter is used to set up a *tone decoder* as recited in independent claims1, 8, 15, and 20,

using their respective language.

Therefore, claims 7, 14, and 26 are patentable over Peeters and Gardner taken alone

or in combination for at lease the reasons provided above.

New Claim 27

New dependent claim 27 is sought to be added. This claim depends from

independent claim 15 and should be found allowable for the reasons discussed above.

Support for dependent claim 27 could be found throughout the Specification, for example,

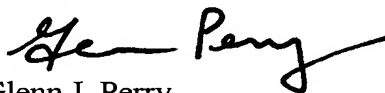paragraphs 0034 and 0041 of the instant application.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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